July 2, 2018

Via e-mail
Alexandra Brun
Maryland Department of the Environment
Air and Radiation Administration
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RE: Public Comments on Maryland Proposed Reasonably Available Control Technology State Implementation Plan

Dear Ms. Brun:

The Environmental Integrity Project ("EIP"), Chesapeake Bay Foundation ("CBF"), Chesapeake Climate Action Network, United Workers, Greater Baybrook Community Land Trust, Clean Water Action, and Sierra Club (collectively, "Commenters") respectfully submit these comments to the Maryland Department of the Environment ("MDE") on its proposed State Implementation Plan ("SIP") certifying Reasonably Available Control Technology ("RACT") for the 2008 ozone National Ambient Air Quality Standard ("NAAQS") as required under Sections 182 and 184 of the Clean Air Act (this document is hereinafter the "Proposed RACT SIP").[1] Commenters appreciate the opportunity to submit comments on this plan.

In the Proposed RACT SIP, MDE has proposed to certify a nitrogen oxides (NOx) limit of 205 parts per million dry volume @ 7% oxygen (hereinafter "ppm") on a 24-hour average as RACT for Maryland's two large municipal solid waste combustors ("MWCs").[2] However, 205 ppm – a limit set by EPA in 1995 and incorporated into Maryland's regulations in 1997 - cannot be considered RACT, as that term is defined by law, for the state's two large MWCs. 205 ppm is not the lowest emissions limit that either large MWC in Maryland "is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[3]

[1]State of Maryland 0.075 ppm 8-Hour Ozone Nitrogen Oxide Reasonably Available Control Technology (NOx RACT) State Implementation Plan SIP Number: 18-04 July 2, 2018 Prepared for: U.S. Environmental Protection Agency Prepared by MDE, as noticed at 45 Maryland Register 607 (June 8, 2018).
[2] Proposed RACT SIP at 15, 27-28, and 92.
[3] *See* COMAR 26.11.01.01.B(40).

As discussed in more detail below, MDE has conclusively stated that both large MWCs in Maryland are capable of meeting more stringent RACT requirements for NOx. Multiple states, some with large MWCs very similar to both facilities in Maryland, have set significantly lower NOx RACT limits for the 2008 ozone standard. In addition, there is ample facility-specific evidence for each Maryland plant, as also discussed in more detail below, showing that RACT for each facility is far below 205 ppm and that a 205 ppm NOx limit cannot be considered RACT for these plants. Finalizing a 205 ppm NOx limit as RACT for either or both of Maryland's large MWCs would be arbitrary and capricious and contrary to law as set forth in the federal Clean Air Act and Maryland's implementing regulations.

Introduction

For approximately two years, MDE has been holding a public stakeholder process[4] as it develops regulations establishing new NOx RACT limits for Maryland's two large MWCs.[5] As part of that process, MDE has concluded that 205 ppm is no longer RACT for these facilities. MDE has also informally issued a draft regulation that sets lower NOx RACT limits for the state's two large MWCs. For the older Wheelabrator Baltimore, L.P. ("Wheelabrator") plant located in Baltimore City, this regulation establishes a NOx limit of 150 ppm on a 24-hour average, which becomes effective on May 1, 2019, and a limit of 145 ppm on a 30-day average, taking effect May 1, 2020. For the newer Montgomery County Resource Recovery Facility ("MCRRF") plant, which added a new NOx control system in 2009 on top of its existing Selective Non-Catalytic Reduction ("SNCR") controls, the regulation sets a 140 ppm 24-hour limit effective May 1, 2019 and a 105 ppm 30-day limit effective May 1, 2020. In a tacit acknowledgement of the fact that the Baltimore facility can almost certainly do much more to reduce its NOx emissions, the draft rule also requires Wheelabrator to complete a technical study for the purpose of analyzing options for even greater NOx reductions. [6]

Based on a discussion with MDE staff, Commenters understand that MDE still intends to promulgate a regulation setting lower NOx limits for Maryland's two large MWCs despite its proposal to certify the existing 205 ppm limit to EPA as RACT for the 2008 ozone NAAQS. Commenters also understand that MDE has a September 6, 2018 deadline by which it must certify RACT to EPA or potentially face sanctions.[7] However, this does not change the fact that 205 ppm is not RACT for MWCs.

Members of the public have repeatedly expressed concern regarding the health effects of NOx emissions from the Wheelabrator Baltimore plant, also known as BRESCO, which was built in 1985. In fact, the Baltimore City Council unanimously passed a resolution in October 2017 urging MDE to set a NOx limit for the Wheelabrator plant that is no higher than 150 ppm on a 24-hour average and to use MDE's authority to set "beyond RACT" limits to require a 45

[4]EIP and CBF incorporate into these comments in their entirety the following comment letters that were submitted to MDE previously as part of the public stakeholder process for the large MWC NOx RACT rulemaking: EIP and CBF comment letter dated April 11, 2018; EIP comment letter dated May 9, 2017; CBF comment letter dated May 9, 2017.

[5] The first public stakeholder meeting was held on August 30, 2016.

[6] MDE, Air Quality Control Advisory Council Agenda for the December 11, 2017 Meeting dated November 21, 2017 (hereinafter "AQCAC Agenda") at 12 (attached hereto as Exhibit A).

[7] *See* EPA, Findings of Failure To Submit State Implementation Plan Submittals for the 2008 Ozone National Ambient Air Quality Standards (NAAQS), 82 Fed. Reg. 9158, at 9161. (Feb. 3, 2017).

ppm limit on a 24-hour basis, the limit that a new incinerator would have to meet.[8] If MDE were to certify a 205 ppm NOx limit as RACT to EPA and then fail to promulgate new NOx limits for this plant, it would be enormously dismissive of the repeated concerns expressed by Baltimore City residents and elected officials.

Background

The Origin of the 205 ppm NOx Limit for Large MWCs.

As an initial matter, MDE's statements in the Proposed RACT SIP regarding the origin of 205 ppm NOx limit are somewhat misleading because they mask the fact that this limit was set by EPA in 1995 and, according to MDE's materials, incorporated into MDE's regulations in 1997. MDE states, in the Proposed RACT SIP, that "[t]he NOx standards under COMAR 26.11.08.08 are based on EPA's Maximum Achievable Control Technology (MACT) standard for municipal waste combustion. The MACT standard was published in the Federal Register on May 10, 2006."[9] However, the MACT rule finalized by EPA in May 2006 did not change the NOx limit set by EPA in an earlier version of the rule, finalized in 1995, for the type of boilers that are used at either of Maryland's large MWCs.[10]

The 2006 rule changed the NOx limit for only one type of NOx boiler – a mass burn rotary waterwall combustor - which is not used at either large MWC in Maryland. EPA's 2006 rule acknowledges that mass burn rotary waterwall combustors are the only type of boiler subject to a NOx limit change in 2006[11] as do the Title V/Part 70 permits for the Wheelabrator the MCRRF plants.[12] In a PowerPoint presentation made by MDE in August 2016, the agency acknowledged that the 205 ppm limit on a 24-hour average was adopted into Maryland's regulations on November 17, 1997.[13] Thus, this limit is over twenty years old.

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[8] Baltimore City Council Resolution 17-0034, October 16, 2017 *available at* https://baltimore.legistar.com/LegislationDetail.aspx?ID=3105015&GUID=C579A5CF-D661-4D96-B3CD-080F5CF626EF&Options=&Search=&FullText=1.

[9] Proposed RACT SIP at 28.

[10] Mass burn waterwall combustors for the Wheelabrator plant and the independent combustion trains used at the MCRRF.

[11] EPA, Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Large Municipal Waste Combustors, 70 Fed. Reg. 27324, 27325, 27334 (May 10, 2006).

[12] Part 70 Operating Permit Fact Sheet Wheelabrator Baltimore, L.P., Permit No. 24-510-01886 (April 1, 2014) at 6. ("On May 10, 2006, the EPA promulgated revisions to Subparts Eb and Cb. The revisions to Subpart Cb include somewhat more stringent standards for five regulated pollutants -particulate matter (PM), cadmium (Cd), mercury (Hg), lead (Pb) and dioxin/furan. Additionally, minimum CEMs availability requirements were made more stringent.") *See also* Part 70 Operating Permit Fact Sheet MCRRF, Permit No. 24-031-01718 (March 4, 2014) at 5-6. Excerpts from both fact sheets are attached as Exhibit B.

[13] MDE PowerPoint, NOx RACT for Municipal Waste Combustors (MWCs), AQCAC Briefing – June 6, 2016 at 11 ("On November 17, 1997, [MDE] adopted. . . regulations in COMAR 26.11.08.08 which, in part, established a NOx emission standard of 205 ppmv (parts per million by volume) based on a 24 hour average" (excerpt attached as Exhibit C)).

The RACT Standard.

i. *RACT.*

RACT is defined as "the lowest emissions limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[14] EPA has described this standard as "technology forcing" and stated that "[i]n determining RACT for an individual source or group of sources, the control agency, using the available guidance, should select the best available controls, deviating from those controls only where local conditions are such that they cannot be applied there and imposing even tougher controls were conditions allow."[15] EPA has also stated that "[i]n evaluating whether controls and emission limitations meet RACT, EPA generally considers controls that have been achieved in practice by other similar existing sources to be technologically and economically feasible."[16]

With respect to economic feasibility, EPA has explained that "[e]conomic feasibility considers the cost of reducing emissions and the difference in costs between the particular source and other similar sources that have implemented emission reduction."[17] Specifically,

> EPA presumes that it is reasonable for similar sources to bear similar costs of emission reductions. Economic feasibility rests very little on the ability of a particular source to 'afford' to reduce emissions to the level of similar sources. Less efficient sources would be rewarded by having to bear lower emission reduction costs if affordability were given high consideration. Rather, economic feasibility for RACT purposes is largely determined by evidence that other sources in a source category have in fact applied the control technology in question.[18]

MDE, in the Proposed RACT SIP, states that the RACT definition

> indicates that the RACT requirements must include compliance with the lowest emission levels that were achieved in the past, are achieved at present, or will be achieved in the future under facility's operational limitations (such as operational permits) and equipment standards that were previously applicable, are presently applicable, or will become applicable in the future, respectively.[19]

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[14] COMAR 26.11.01.01B(40); *accord* U.S. EPA, State Implementation Plans; Nitrogen Oxides Supplement to the General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990, 57 Fed. Reg. 55,620, 55,624 (Nov. 25, 1992).

[15] Memorandum from Roger Strelow, Assistant Admin., Air and Waste Management, U.S. EPA, *Guidance for Determining Acceptability of SIP Regulations in Non-attainment Areas*, to Regional Administrators, Regions I-X (Dec. 9, 1976), *available at* https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/19761209_strelow_ract.pdf (attached as Exhibit D).

[16] EPA, Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; Regulatory Amendments Addressing Reasonably Available Control Technology Requirements Under the 1997 and 2008 8-Hour Ozone National Ambient Air Quality Standards, Proposed Rule, 83 Fed. Reg. 11155, 1158 (March 14, 2018)

[17] EPA, State Implementation Plans; General Preamble for the Implementation of Title I of the Clean Air Act Amendments of 1990; Supplemental, 57 Fed. Reg. 18,070, 18,074 (Apr. 28, 1992).

[18] *Id*.

[19] Proposed RACT SIP at 20.

ii. RACT for the 2008 ozone NAAQS.

With respect to RACT for the 2008 ozone NAAQS, EPA has made clear that states may not simply re-certify prior RACT determinations, as MDE is proposing to do here for large MWCs, when new data or public comments indicate that the previous RACT determination is no longer justified. Specifically, EPA has stated that it is only "[a]bsent data or public comments indicating that the previous RACT determination is no longer appropriate, [that] the state need not adopt additional SIP controls to meet the new RACT requirement for these sources."[20] EPA has also stated:

> we advise states to consider new information that has become available before certifying that a prior 1-hour ozone RACT determination or a 1997 ozone RACT determination, even where controls were required, still represents an appropriate RACT level of control for the 2008 ozone program. In the alternative, the state should revise the SIP to reflect a modified RACT requirement for specific sources or source categories. In cases where additional information is presented, for example, as part of notice-and-comment rulemaking on a RACT SIP submittal, states (and the EPA) would necessarily consider the additional data in reviewing what control obligation is consistent with RACT.[21]

Argument

I. MDE Has Concluded That a 24-hour NOx Limit of 205 ppm is No Longer RACT for Maryland's Two Large MWCs.

As discussed above, MDE has been conducting a public stakeholder process on NOx RACT for Maryland's large MWCs. As part of this process, MDE has conclusively stated its determination that RACT for Maryland's large MWCs is lower than the existing 205 ppm limit. Specifically, MDE has stated:

> Large MWCs in Maryland have demonstrated the ability to reduce NOx emissions through analysis and optimization of existing controls. Based upon regional NOx RACT amendments, optimization studies, and upgrades performed by Maryland sources, the Department has concluded that Maryland MWCs are capable of meeting more stringent NOx RACT requirements.[22]

MDE has also stated: "The Department has concluded that the NOx RACT standards for MWCs can be strengthened within the definition of RACT[.]"[23]

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[20]EPA, Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements, 80 Fed. Reg. 12264, 12280 (March 6, 2015).

[21] EPA, Response to Comments on Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements (February 13, 2015) at 103 (excerpt attached hereto as Exhibit E).

[22] AQCAC Agenda at 4 (Exhibit A).

[23] MDE, NOx RACT for Municipal Waste Combustors (MWCs), AQCAC Meeting – December 11, 2017 PowerPoint at 13 (attached hereto as Exhibit F).

Thus, by MDE's own acknowledgment, the 205 ppm NOx limit for large MWCs that MDE is proposing to certify as RACT is not RACT. If MDE finalizes this proposal, it will constitute an arbitrary and capricious decision that is contrary to law.

II. A 24-Hour NOx Limit of 205 ppm Does Not Constitute RACT for the Wheelabrator Baltimore Facility.

A 205 ppm NOx limit cannot be considered RACT for the Wheelabrator Baltimore facility. Several states have set NOx RACT limits for large MWCs similar to this facility that are much lower, and two Wheelabrator large MWCs that are extremely similar to the Baltimore plant – located in Connecticut and New Jersey respectively – are subject to this limit. Documents developed during the public stakeholder process also show that the Wheelabrator Baltimore plant is able to meet a 24-hour limit of 150 ppm, and likely an even lower limit of 135 ppm, simply by optimizing its existing NOx control system. Finally MDE has not assessed whether two types of potentially technically and economically feasible add-on NOx controls may constitute RACT for this plant.

A. Other States Have Set Much Lower RACT Limits for Large MWCs That are Similar to the Wheelabrator Baltimore Facility.

EPA has stated that "[i]n evaluating whether controls and emission limitations meet RACT, EPA generally considers controls that have been achieved in practice by other similar existing sources to be technologically and economically feasible."[24] Multiple states have set NOx RACT limits far lower than 205 ppm for large MWCs that are similar to the Wheelabrator incinerator. In fact, Commenters are unaware of any state that has certified a NOx RACT limit above 180 ppm for large MWCs for the 2008 ozone NAAQS.

New Jersey, Connecticut, and Massachusetts have all either adopted or proposed adoption of a 150 ppm standard for NO_x RACT for large MWCs like the Wheelabrator Baltimore facility. In 2016, Connecticut adopted a 150 ppm limit for mass burn waterwall combustors on a 24-hour daily average. [25] New Jersey adopted a 150 ppm limit for all municipal solid waste incinerators in the state, which became effective in 2009 or 2011, depending on the facility, although the regulations allow incinerators to seek an exception to this rule. [26] Based on a white paper released in February 2017 by the Ozone Transport Commission ("OTC") (hereinafter "OTC NO_x Control White Paper") it appears that all large MWCs in the state are subject to the 150 ppm (no exceptions appear to have been granted).[27] In 2013, Massachusetts,

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[24] EPA, Approval and Promulgation of Air Quality Implementation Plans; Pennsylvania; Regulatory Amendments Addressing Reasonably Available Control Technology Requirements Under the 1997 and 2008 8-Hour Ozone National Ambient Air Quality Standards, Proposed Rule, 83 Fed. Reg. 11155, 1158 (March 14, 2018)

[25] Regs. Conn. State Agencies § 22a-174-38(c)(8) Table 32-a.

[26] New Jersey's regulations require compliance by 2009 "if compliance is achieved by optimizing the existing NOx air pollution control system without modifying the . . . incinerator" and by 2011 "if compliance is achieved by installing a new NOx air pollution control system on an existing . . . incinerator or by physical modifying an existing . . . incinerator." New Jersey Department of Environmental Protection ("NJ DEP"), N.J.A.C. 7:27-19.12.

[27] Ozone Transport Commission (OTC) Stationary & Area Sources Committee, *White Paper on Control Technologies and OTC State Regulations for Nitrogen Oxides (NOx) Emissions from Eight Source Categories*, (hereinafter "OTC NO_x Control White Paper"), Appendix D, pp. 1-2 (Feb. 10, 2017, *at* http://www.otcair.org/upload/Documents/Reports/OTC_White_Paper_NOx_Controls_Regs_Eight_Sources_Final_Draft_02152017.pdf (excerpts at Exhibit G).

proposed a NO_x RACT limit of 150 ppm for mass burn waterwall combustors, but the rule has not been finalized.[28] Lastly, New York State has recently announced that it is considering a 150 ppm limit on a 24-hour basis for its fleet of MWCs. [29]

Of the NOx RACT limits for the 2008 ozone NAAQS of which Commenters are aware, the highest limit for large MWCs is a 180 ppm limit set by Pennsylvania. The State of Connecticut recently submitted comments to EPA arguing that Pennsylvania's proposed limit of 180 ppm is too high to constitute RACT for MWCs for the 2008 ozone standard and that RACT is 150 ppm.[30] Commenters agree with Connecticut that 180 ppm is too high to be RACT for large MWCs, and we are referencing the Pennsylvania proposal simply to emphasize how extraordinarily high Maryland's proposal of 205 ppm is.

B. Other Wheelabrator large MWCs that are similar to the Baltimore City facility are subject to a 150 ppm RACT limit.

In addition, there are Wheelabrator large MWCs that appear very similar to the Baltimore City plant located in other states that are subject to 150 ppm RACT limits for NO_x. Two of those facilities, and their similarities to the Baltimore City facility, are described in more detail below.

Facility: Wheelabrator Bridgeport, L.P. (CT)[31]

- Details: 69.5 MW Steam Generation (Combined Heat and Power)
- Installation Year: 1988
- Specifications: Three 750 ton per day Babcock & Wilcox/Von Roll Reciprocating Grate Waterwall Furnaces. Boiler MCR of 325 MMBtu/hr and 196,800 lb/hr of steam.
- NOx Controls: SNCR-NOx Control (urea), with injection rate from 0-35 gal/hr
- Ammonia slip limit: 20 ppm

The design and operation of Wheelabrator Bridgeport appear to be very similar to the Baltimore City plant, with many of the furnace specifications being identical to the Baltimore facility. Both plants use three 750 ton per day Babcock & Wilcox/Von Roll Reciprocating Grate Waterwall Furnaces, which produce steam for heating or for electricity generation. Each combustor has a maximum heat input rate of 325 MMBtu/hr, and similar design steam flow rate (193,600 lb/hr steam for Wheelabrator Baltimore).[32] The air emission controls at both facilities

[28] Massachusetts Department of Environmental Protection, Proposed Amendments to the Clean Air Act Section 111(d), Including the Municipal Waste Combustor Regulation 310 CMR 7.08(2) (May 2013) *at* http://www.mass.gov/eea/docs/dep/service/regulations/310cmr07.pdf.

[29] New York State Department of Environmental Conservation letter to stakeholders, March 26, 2018. Attached hereto as Exhibit H.

[30] Connecticut Department of Energy and Environmental Protection ("CT DEEP") public comments on EPA proposal to approve Pennsylvania RACT SIP Revision, April 13, 2018, *at* http://www.ct.gov/deep/lib/deep/air/regulations/CTDEEPcommentsonEPAproposedapprovalPARACT.pdf (attached hereto as Exhibit I).

[31] CT DEEP, Title V Operating Permit: Wheelabrator Bridgeport, L.P. Permit No. 015-0219-TV (issued Dec. 3, 2014) (hereinafter "Wheelabrator Bridgeport Title V Permit") *at* http://www.ct.gov/deep/lib/deep/air/permits/titlev/wheelabarator_bridgeport/p_015-0219-tv.pdf (attached as Exhibit J).

[32] Wheelabrator January 17, 2017 PowerPoint (attached hereto as Exhibit K).

use urea-based SNCR, spray dryer absorbers, and activated carbon injection, while Wheelabrator Bridgeport uses a baghouse instead of an electrostatic precipitator (ESP).

Prior to Connecticut's 2016 adoption of a 150 ppm NO_x RACT limit, the Wheelabrator Bridgeport facility was subject to a NOx limit of 200 ppm.[33] In October 2016, Wheelabrator Bridgeport received a permit modification that allows it to install a flue gas recirculation ("FGR") system by August 1, 2017 to improve SNCR performance.[34]

Facility: Wheelabrator Gloucester County Resource Recovery Facility (NJ)[35]

- Details: 14 MW[36] Electric Generating Unit
- Installation Year: 1990
- Specifications: Two 287.5 ton per day mass burn waterwall MSW combustors, rated at 108 MMBtu/hr with a maximum steam production of 286,664 lbs for any 4-hour block period.
- NOx Controls: SNCR-NOx Control (urea)
- Ammonia slip limit: 20 ppm

Wheelabrator Gloucester operates mass burn waterwall combustors, controlled by urea-based SNCR, spray dryer absorbers, activated carbon injection, and particulate baghouses. According to a permit modification, Wheelabrator met New Jersey's updated NO_x RACT standard of 150 ppm by installing a minimum of four additional SNCR injector ports in each furnace at this plant and increasing SNCR system control via system optimization and temperature profiling.[37]

Thus, large MWCs that are extremely similar to the Baltimore facility are subject to a 150 ppm 24-hour NOx limit.

C. Materials developed during Maryland's public stakeholder process show that RACT for the Wheelabrator Baltimore facility is much lower than 205 ppm.

Materials developed as part of the Maryland's public stakeholder process also clearly show that RACT for the Baltimore facility is much lower than 205 ppm.

i. Technical Feasibility

A control optimization test performed in June 2017 at the Wheelabrator facility demonstrated that a 24-hour limit of 150 ppm can be met without installation of new control

[33] Wheelabrator Bridgeport Title V Permit, *supra* note 31.
[34]CT DEEP, New Source Review Permit: Wheelabrator Bridgeport, L.P. Permit No. 015-0097 (hereinafter "Wheelabrator Bridgeport NSR Permit"),p. 4, Oct. 21, 2016 *at* http://www.ct.gov/deep/lib/deep/air/permits/titlev/wheelabarator_bridgeport/p_015-0097.pdf (attached hereto as Exhibit L).
[35]NJ DEP, Minor Modification Permit: Wheelabrator Gloucester Company, L.P. BOP090001 (Oct. 16, 2009) (hereinafter "Wheelabrator Gloucester Modification") (excerpts attached as Exhibit M).
[36] Wheelabrator Technologies, Wheelabrator Gloucester *at* https://www.wtienergy.com/plant-locations/energy-from-waste/wheelabrator-gloucester (last visited May 5, 2017).
[37]Wheelabrator Gloucester Modification, *supra* note 35.

technology.[38] In fact, although the proposed rule has still not been published in the Maryland Register, MDE has concluded that RACT for the Wheelabrator Baltimore facility is 150 ppm on a 24-hour average and 145 ppm on a 30-day average.[39]

In addition, an expert consultant retained by CBF, Dr. Ranajit Sahu, concluded that the Wheelabrator Baltimore facility could achieve even lower NOx limits using its existing controls.[40] Dr. Sahu concluded, based on his review of the above-referenced control optimization report as well as the facility's continuous pollution monitoring data, that Wheelabrator can achieve a limit of 135 ppm on a 24-hour basis and 130 ppm on a 30-day basis using its existing control technology, solely through further optimization of those controls.[41]

Thus, it has been demonstrated that it is technically feasible for Wheelabrator to meet a 150 ppm 24-hour limit or lower solely through optimization of its existing NOx controls.

ii. Economic Feasibility

EPA "generally considers controls that have been achieved in practice by other similar existing sources to be . . . economically feasible."[42] In addition, EPA has stated that economic feasibility "is largely determined by evidence that other sources in a source category have in fact applied the control technology in question" and that it "rests very little on the ability of a particular source to 'afford' to reduce emissions to the level of similar sources."[43] As stated above, Wheelabrator large MWCs similar to the Baltimore City facility are subject to a 150 ppm limit on a 24-hour basis, showing that this limit is economically feasible, for purposes of RACT, for the Baltimore plant.

In addition, MDE has characterized the costs of achieving the limits set in its informally issued draft regulation, which include a 150 ppm 24-hour limit and a 145 ppm 30-day limit for the Wheelabrator facility, as being relatively small. Specifically, MDE stated

> [Maryland's] Large MWCs are expected to incur a small increase in operating costs as a result of optimization of existing control technology and increase of urea consumption. The operating cost increase is projected to be in the range $1,123 to $1,269 per ton of NOx reduced based on the increase in urea consumption. Additional capital costs have been incurred at the Wheelabrator Baltimore, Inc. facility in an effort to meet the proposed NOx RACT emission rates. Wheelabrator Baltimore, Inc. has conducted several analyses of existing operating combustion and control systems, and has modified urea injection systems to be optimized for multiple parameters. The facility has also modified

[38] Bisnett, M. "NOx Optimization Project Wheelabrator Baltimore Inc." Fuel Tech Project 459S, June 5-9, 2017 (hereinafter "June 2017 Fuel Tech Study") at 5. Email from Timothy Porter, Wheelabrator Technologies, to Randy Mosier, MDE, dated July 31, 2017 regarding optimization and providing data from testing conducted June 12-14 and 20-20, 2017. These materials are attached hereto as Exhibit N.
[39] AQCAC Agenda at 12 (Exhibit A).
[40] Expert Report on NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore, owned and operated by Wheelabrator Baltimore, L.P. by Dr. Ranajit (Ron) Sahu, Consultant, dated May 10, 2018 (hereinafter "May 2018 Sahu Report"). Attached hereto as Exhibit O.
[41] May 2018 Sahu Report at 3-8
[42] 83 Fed. Reg. 1158 (March 14, 2018)
[43] 57 Fed. Reg. 18,074 (Apr. 28, 1992).

interface combustion controls with SNCR operation and control through automation of the urea feed system. Specific cost information has not been made available to the Department.[44]

Thus, it has been shown that it is economically feasible for the Wheelabrator Baltimore facility to meet a 24-hour NOx limit that is far lower than 205 ppm.

D. Cost-effective add-on NOx controls exist for large MWCs that have never been analyzed by MDE as RACT for the Wheelabrator Baltimore facility.

In addition, EPA has described RACT as "technology forcing" and stated that "[i]n determining RACT for an individual source or group of sources, the control agency, using the available guidance, should select the best available controls, deviating from those controls only where local conditions are such that they cannot be applied there and imposing even tougher controls were conditions allow."[45]

During the course of the public stakeholder process, advocates identified two types of add-on NOx controls that are known to substantially reduce NOx and to be relatively cost effective. In an October 2016 letter to MDE, the signatories to that letter requested that MDE assess whether Regenerative Selective Catalytic Reduction ("RSCR") may constitute RACT. RSCR is the NOx control technology that would have been installed on the Energy Answers large MWC in Baltimore City, which was originally permitted in 2010 and is no longer moving forward. This technology was touted in project materials as more cost-effective than Selective Catalytic Reduction ("SCR") while achieving an 80% reduction efficiency.[46] RSCR was also determined to be technically feasible for a second Maryland large MWC that was permitted but not built: the Frederick/Carroll County Renewable Waste-to-Energy Facility ("FCCRWTE"), which would have used mass burn waterwall combustors like the Wheelabrator Baltimore plant.[47] This determination was made in a permit application for the FCCRWTE project submitted by Wheelabrator and the Northeast Maryland Waste Disposal Authority ("NMWDA"). In May 2017, EIP and CBF also requested that MDE consider whether a different technology, called hybrid SCR/SNCR, constitutes RACT. Dr. Sahu noted in a May 2017 expert report that this system, if technically feasible, would reduce NOx significantly, by about 50-75%, and its cost would be far lower than SCR.[48]

[44] AQCAC Agenda at 8-9 (Exhibit A).
[45] EPA Strelow memorandum, *supra* note 15, (Exhibit D).
[46] Maryland Power Plant Research Program ("PPRP"), Supplemental Environmental Review Document, Motion by Energy Answers Baltimore, LLC, to Amend the Construction Commencement Deadline in its Certificate of Public Convenience and Necessity, Maryland Public Service Commission Docket No. 9199 (June 2012) at 6-6 (excerpt attached hereto as Exhibit P).
[47] Frederick/Carroll County Renewable Waste-to-Energy Facility, Prevention of Significant Deterioration/Air Construction Permit Application, Prepared for NMWDA and Wheelabrator Technologies, Inc. by Environmental Consulting & Technology, Inc., Last Revised: October 2012, at 4-6, 6-12 (excerpt attached here to Exhibit Q).
[48] The Expert Report on NOx Emissions from the Wheelabrator Baltimore Municipal Waste Incinerator in Baltimore City, owned and operated by Wheelabrator Baltimore, L.P. ("Wheelabrator") by Dr. Ranajit (Ron) Sahu, Consultant, May 5, 2017 (hereinafter "May 2017 Sahu Report") at 4. Attached as Exhibit R.

Dr. Sahu has concluded, after reviewing several sets of materials relating to the Wheelabrator Baltimore MWC,[49] that he sees "no technical impediments to the implementation of the [most effective] NOx-reducing technologies, such as SCR (or hybrid SNCR/SCR), in the appropriate locations along the gas paths at each of the [Wheelabrator Baltimore] boilers."[50] However, as far as Commenters are aware, none of these technologies have been assessed as RACT for the Wheelabrator Baltimore facility.

E. Part II Conclusion

Large MWCs in other states that are very similar to the Wheelabrator Baltimore facility are subject to a 150 ppm NOx limit as RACT. In addition, several other states have set much lower NOx limits for mass burn waterwall combustor-fired large MWCs as RACT, and documents developed as part of the recent public stakeholder process have shown that Wheelabrator can achieve a 150 ppm limit, and even a lower limit of 135 ppm, on a 24-hour basis simply by optimizing its existing controls. Finally, MDE has not analyzed whether certain technologies may constitute RACT for the Baltimore facility.

A 205 ppm 24-hour NOx limit is not "the lowest emissions limit that [the Wheelabrator Baltimore MWC] is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[51] Thus, this limit cannot be considered RACT for the Wheelabrator Baltimore facility.

III. A 24-hour NOx Limit of 205 ppm Does Not Constitute RACT for the MCRRF Plant.

MDE has also proposed to certify to EPA that a 205 ppm 24-hour NOx limit constitutes RACT for the MCRRF plant in Montgomery County. This is extremely troubling because this limit is almost twice the NOx limit that MDE has found the plant can meet on a 30-day basis and 46% higher than the limit that MDE has found the plant can meet on a 24-hour basis, simply by running its existing control technology.

A new pollution control system, referred to as "Low NOx," was voluntarily added to the MCRRF's SNCR system in 2009. This new system cut the plant's NOx emissions, in tons per year, by about 50% when comparing the 2006-2008 and 2009-2011 periods.[52] MDE has described the Low NOx system at MCRRF as achieving an "[a]pproximate 47 percent reduction on long term basis, but subject to high variability on daily basis, lesser can be assured on a short-term basis[.]"[53] The annual average of MCRRF's 24-hour NOx emissions was between 85 and

[49] These materials include the reports for both optimization studies performed at the facility (one in 2016 and one in 2017), 1-hour averaged NOx CEMS data collected at the three boilers during 2017, and the PowerPoint presentation made by Wheelabrator at the January 2017 stakeholder meeting. May 2018 Sahu Report at 1 (Exhibit O).
[50] May 2018 Sahu Report at 10 (Exhibit O).
[51] COMAR 26.11.01.01B(40).
[52] According to data from the Maryland Emissions Inventory, MCRRF's annual average NO_x emissions from 2006-2008 were 1,016 tons per year. After the installation of the new Low NO_x controls, during the period from 2009 through 2011, average NO_x emissions were 522 tons per year. This is an average reduction of 494 tons per year or 48.6% of emissions.
[53] MDE December 11, 2017 PowerPoint at 12 (Exhibit F).

89 ppm every year from 2013 to 2016.[54] MDE's new draft NOx regulation accounts for the lower long-term emissions with short-term variability by setting a 30-day limit of 105 ppm and a 24-hour limit of 140 ppm.

In addition, the Virginia Department of Environmental Quality ("VDEQ") concluded that RACT for a very similar MWC located in Lorton, Virginia is much lower than 205 ppm. Both MWCs are operated by subsidiaries of Covanta, allowing for the use of the Low NOx system, which is patented by Covanta. After conducting an initial RACT review for the Lorton facility, which was not at the time equipped with the Low NOx system, VDEQ stated that it considers the following to be RACT for each MWC unit there: "installation and operation of Covanta's [Low NOx] combustion technology, in combination with SNCR" meeting NOx limits of 110 ppm on a daily average, 90 ppm on an annual average, and 233 tons per year.[55]

RACT is "the lowest emissions limit that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility."[56] Covanta can achieve a limit at the MCRRF plant that is far lower than 205 ppm on a 24-hour basis simply by running its existing controls and this plant has been achieving NOx rates far below this limit. A 205 ppm NOx limit on a 24-hour basis cannot be considered RACT for the MCRRF facility.

IV. It Appears that MDE has Failed to Comply with EPA's Public Participation Requirements for Issuing the Proposed RACT SIP.

EPA has established procedural requirements governing the opportunities that state agencies must provide for the public to participate as SIP documents, including the Proposed RACT SIP, are issued. For such a SIP document,

> [s]tates must provide notice, provide the opportunity to submit written comments and allow the public the opportunity to request a public hearing. The State must hold a public hearing or provide the public the opportunity to request a public hearing.[57] The notice announcing the 30 day notification period must include the date, place and time of the public hearing.[58]

In addition, the hearing "will be held only after reasonable notice, which will be considered to include [certain notice] at least 30 days prior to the date of such hearing . . . ."[59] Among the requirements for notice of hearing is that the notice must be "given to the public by

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[54] *Id.* at 17.
[55] Letter from Thomas J. Faha, Regional Director, VDEQ, to Frank N. Capibianco, Covanta Facility Manager (September 29, 2017), available at https://www.epa.gov/sites/production/files/2017-10/documents/2017updatecaroline.11cfi_nox_ract.pdf (attached hereto as Exhibit S).
[56] COMAR 26.11.01.01.B(40).
[57] The state may elect to notice the opportunity for a public hearing and then cancel the hearing. However, the state may choose to do this only if the original notice states that the hearing will be cancelled if no request for a hearing is received. 40 C.F.R. § 51.102(a). The notice published by MDE in the Maryland Register does not provide this warning.
[58] 40 C.F.R. § 51.102(a).
[59] 40 C.F.R. § 51.102(d).

prominent advertisement in the area affected announcing the date(s), time(s), and place(s) of such hearing(s)[.]"[60]

MDE published notice of the July 2, 2018 public hearing on the Proposed RACT SIP and the July 2, 2018 written comment deadline in the June 8, 2018 Maryland Register. This afforded the public 24 days' notice, and not the required 30 days' notice, of the hearing and of the comment deadline. MDE staff also informed several groups at the July 2 hearing that it published notice of the hearing on its website on May 23, 2018. However, this does not appear to meet the requirement that notice must be made "by prominent advertisement in the area affected . . . ."[61] Thus, it appears that MDE has failed to comply with the procedural requirements for issuing the Proposed RACT SIP.

Thank you for your consideration of these comments.

Sincerely,

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[60] 40 C.F.R. § 51.102(d)(1).
[61] *See id.*

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